Fig 1

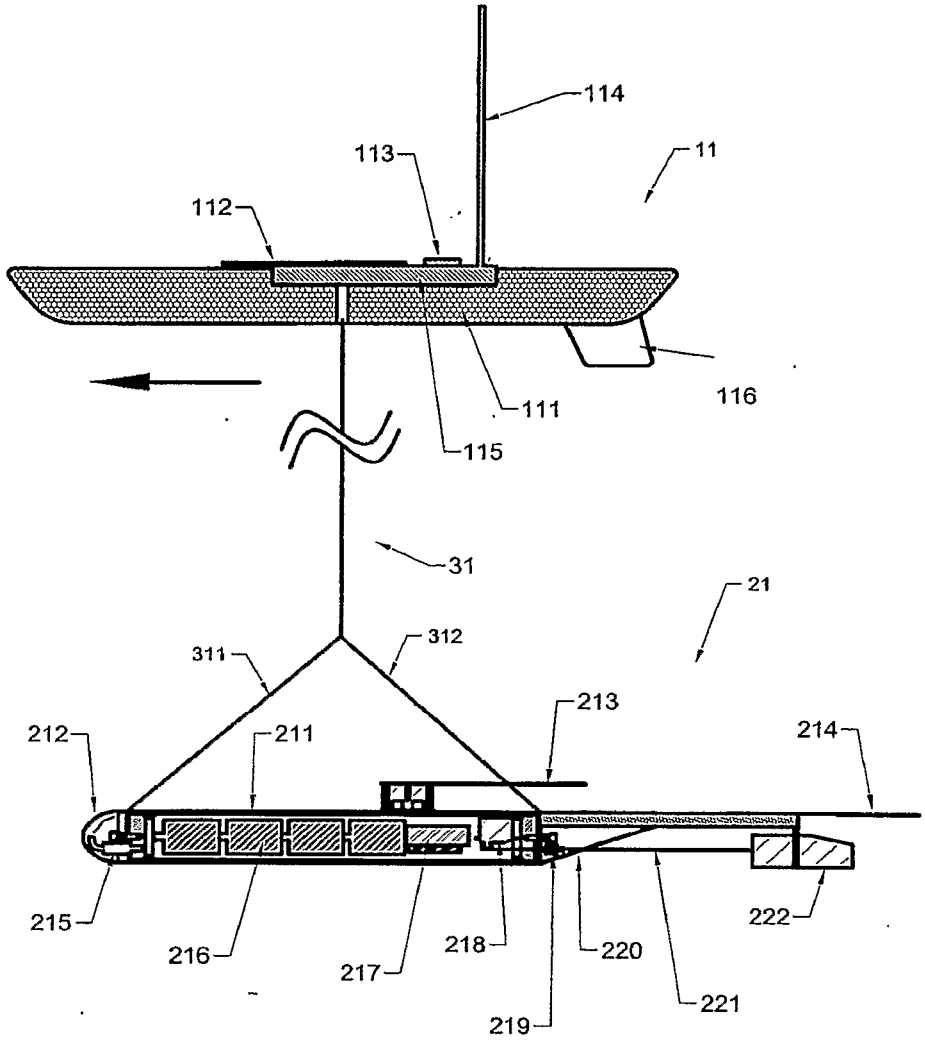

114
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222

Fig 2

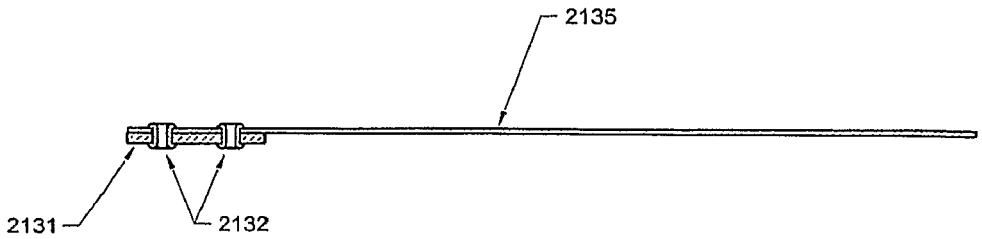


Fig 3

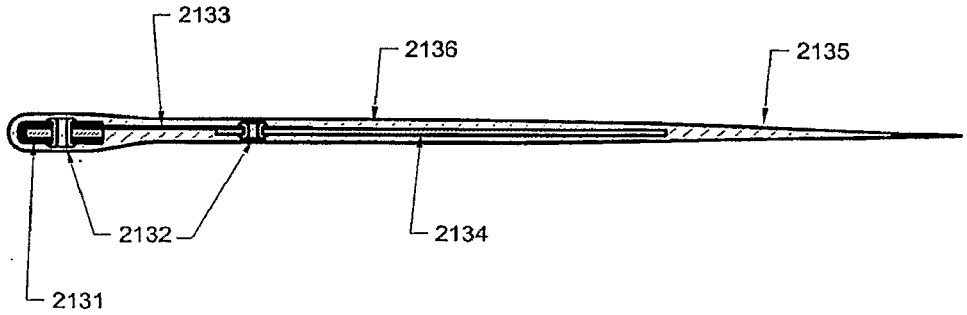


Fig 4

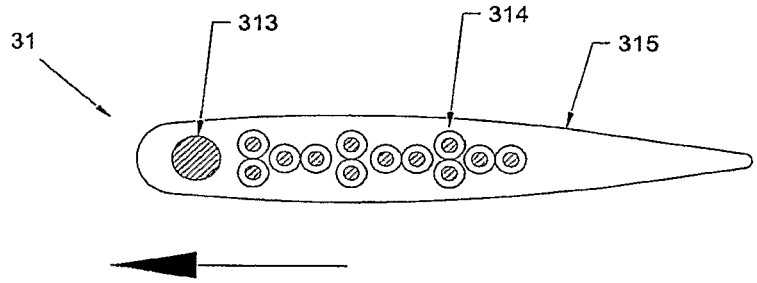


Fig 5

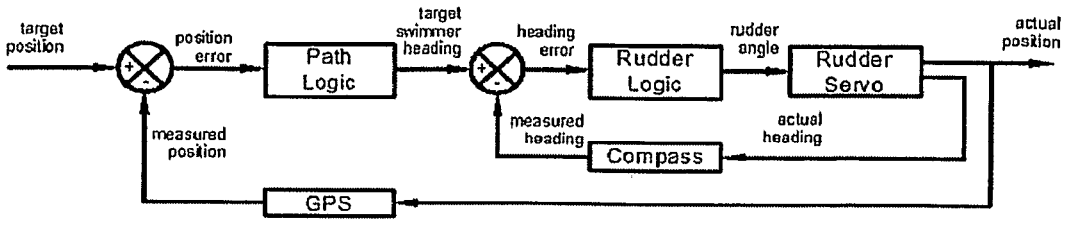

target position
position error
Path Logic
target swimmer heading
heading error
Rudder Logic
rudder angle
Rudder Servo
actual position
measured position
measured heading
Compass
actual heading
GPS

Fig 6

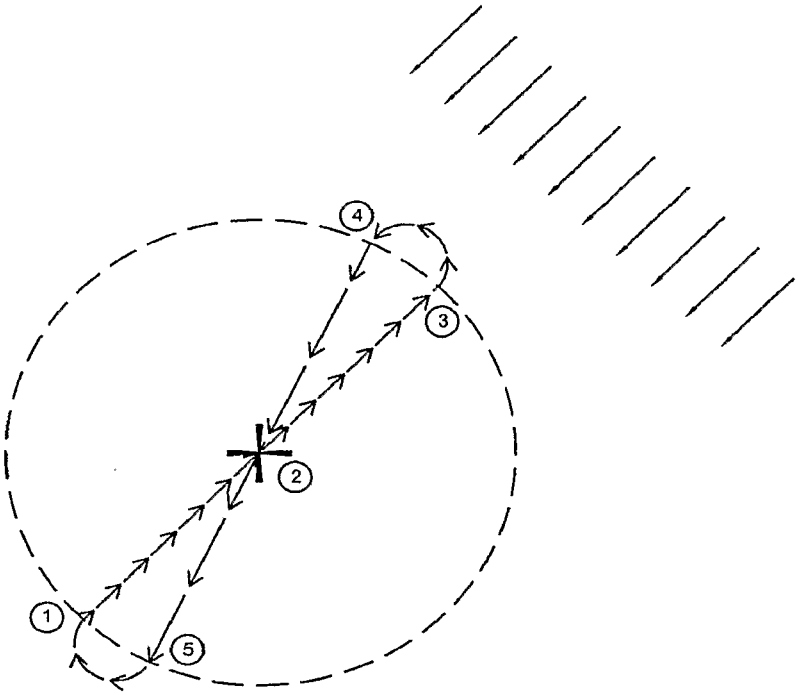

1
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3
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Fig 7

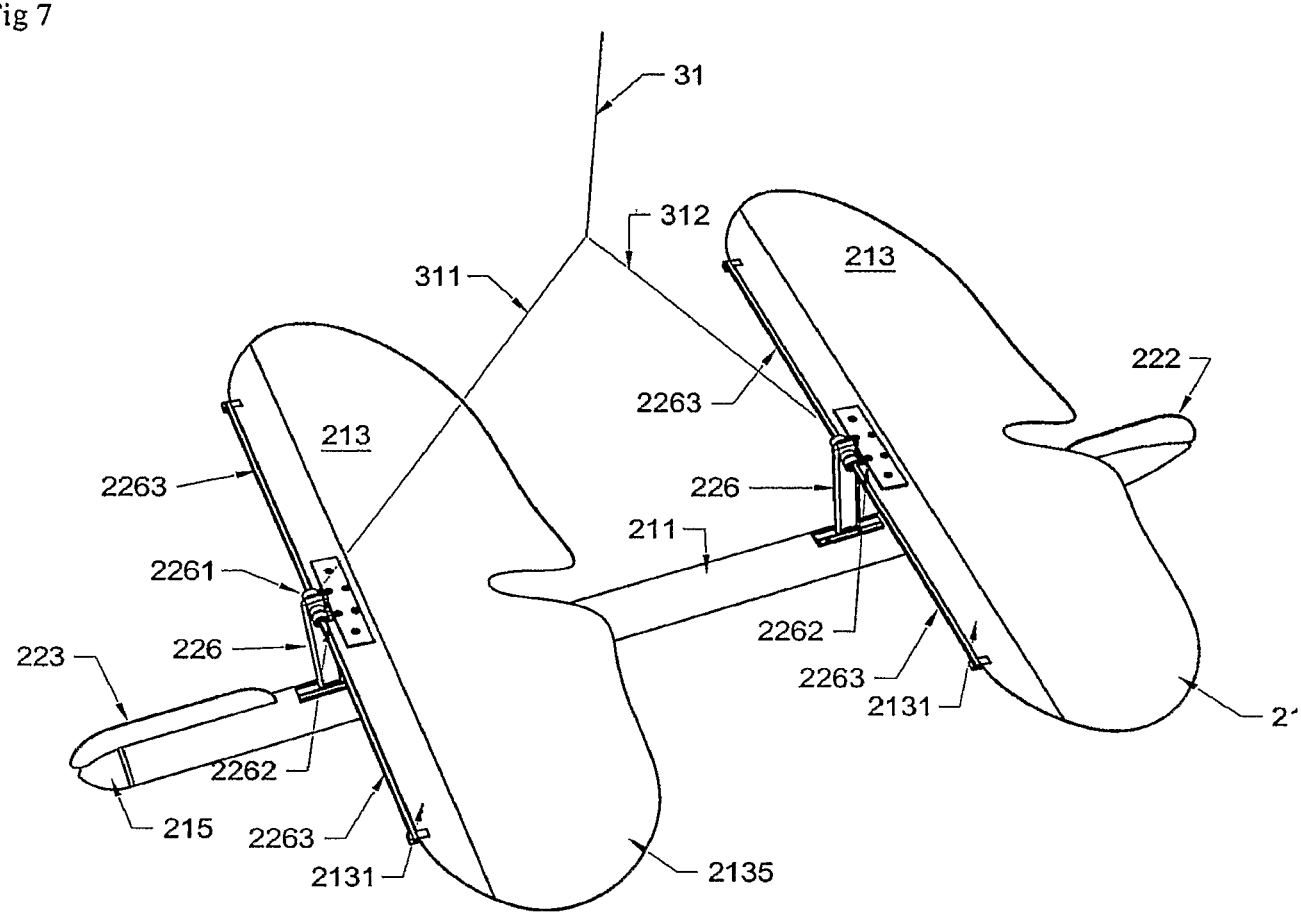

31
312
311
213
222
2263
213
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2261
223
226
2262
2263
2131
2'
215
2262
2263
2131
2135

Fig 8

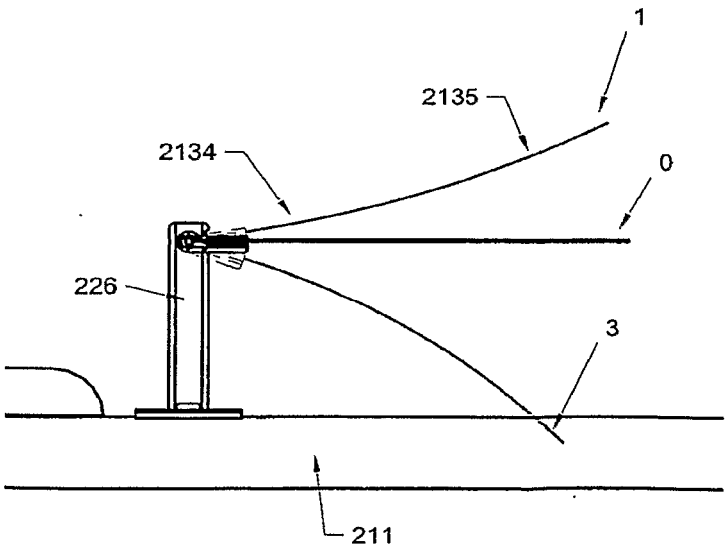

1
2135
2134
0
226
3
211

Fig 9

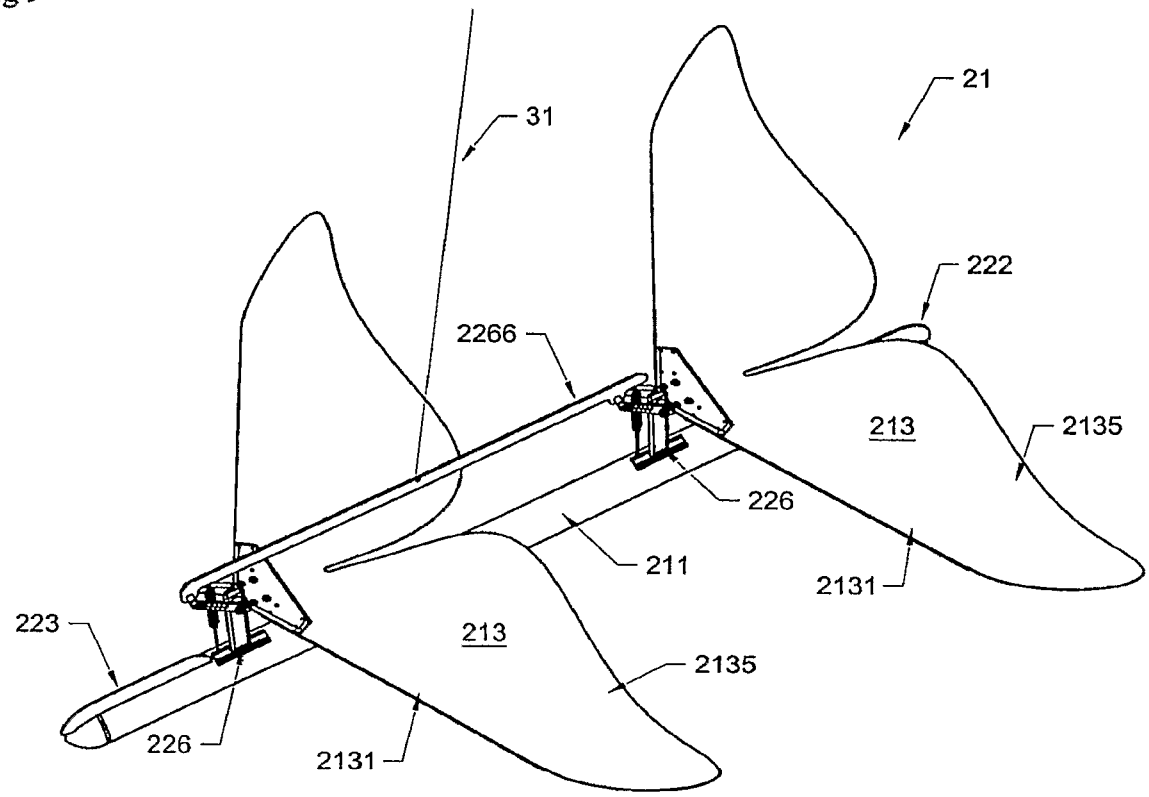

31
21
222
2266
213
2135
226
211
2131
223
213
2135
226
2131

Fig 10

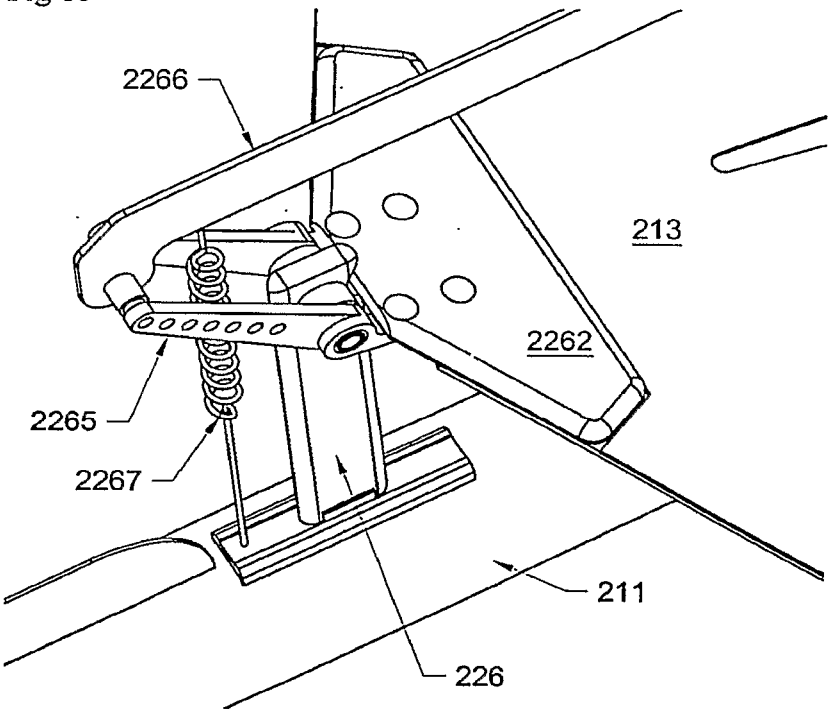

2266
213
2262
2265
2267
211
226

Fig 11a

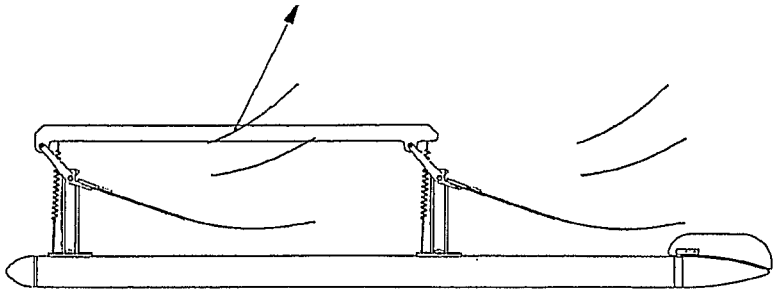


Fig 11b

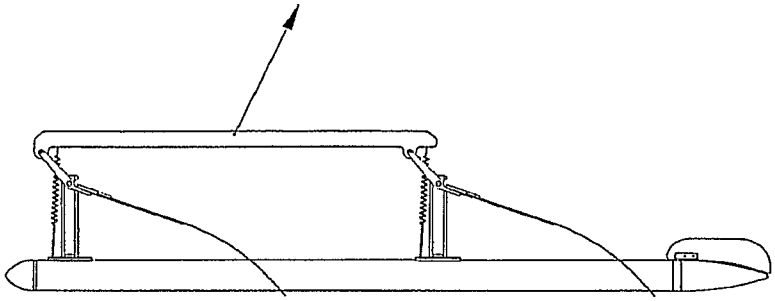


Fig 11c

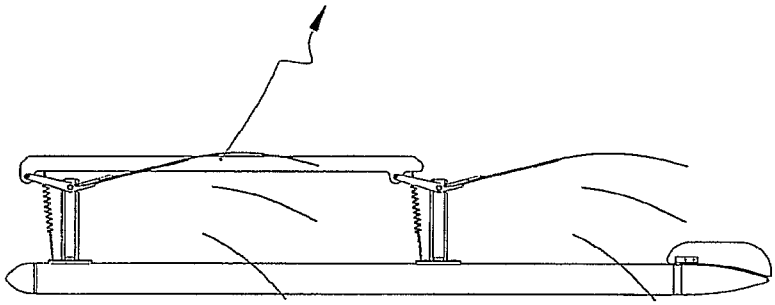


Fig 11d

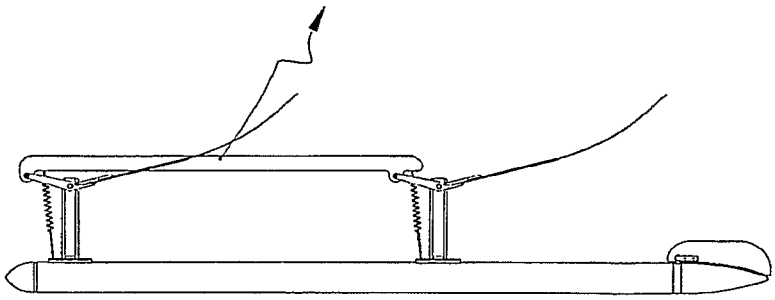


Fig 12

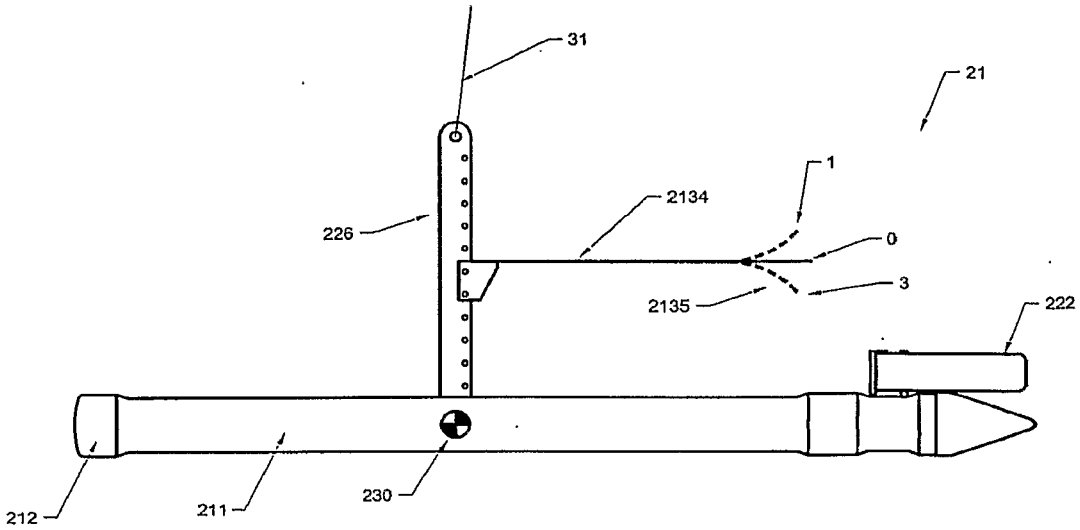

31
21
1
2134
226
0
3
2135
222
212
211
230

Fig 13

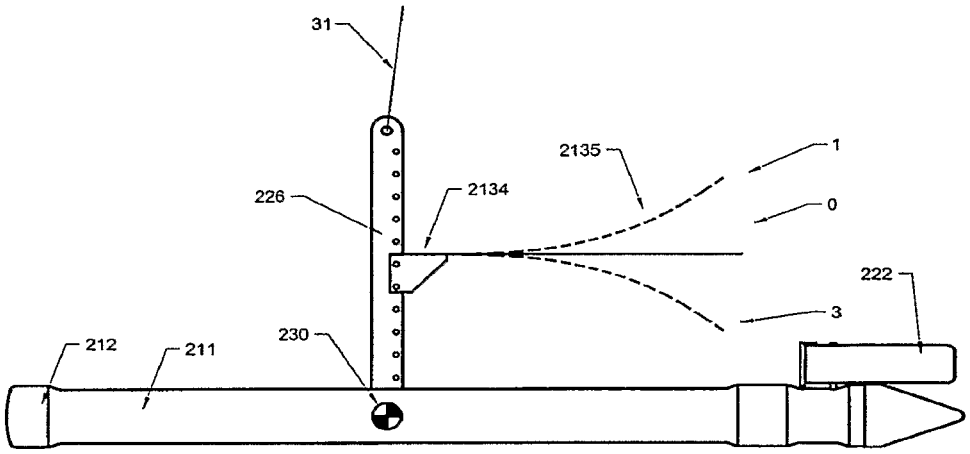

31
2135
1
226
2134
0
222
3
212
211
230

Fig 14

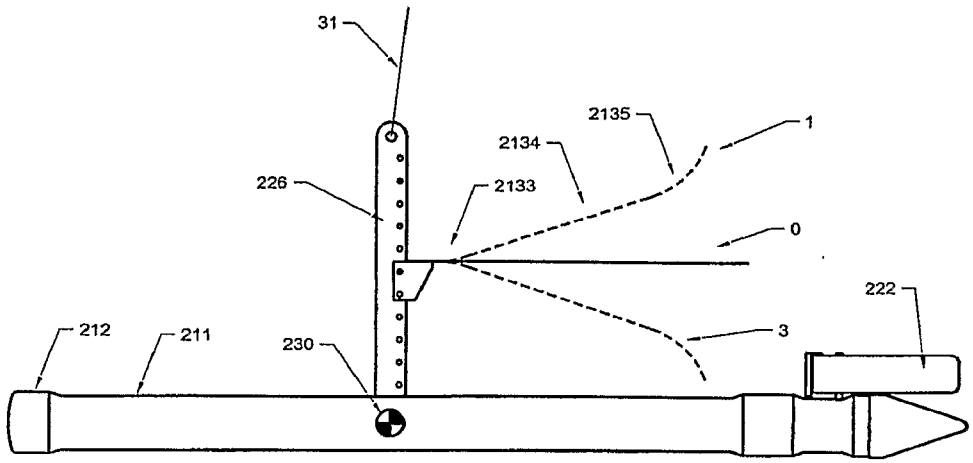

31
2135
1
2134
226
2133
0
222
212
211
230
3

Fig 15

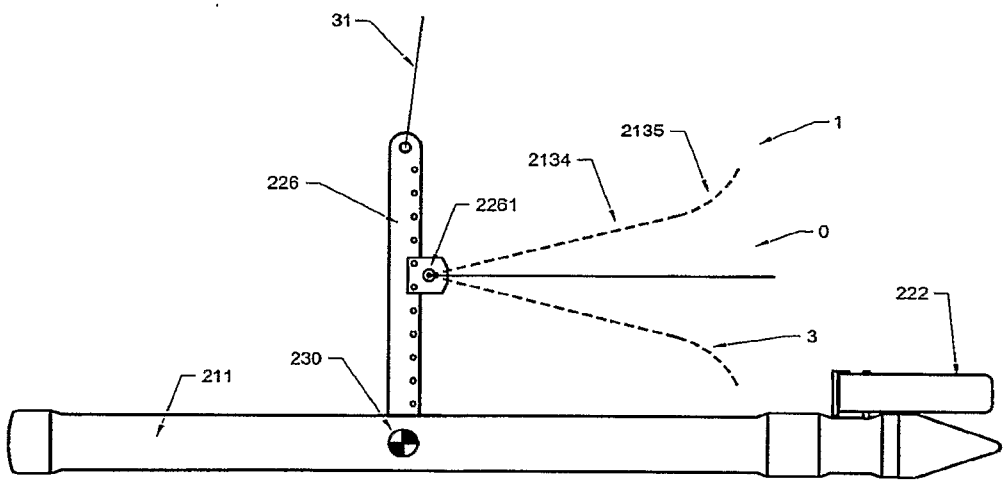

31
2135
1
2134
226
2261
0
222
3
230
211

Fig 16

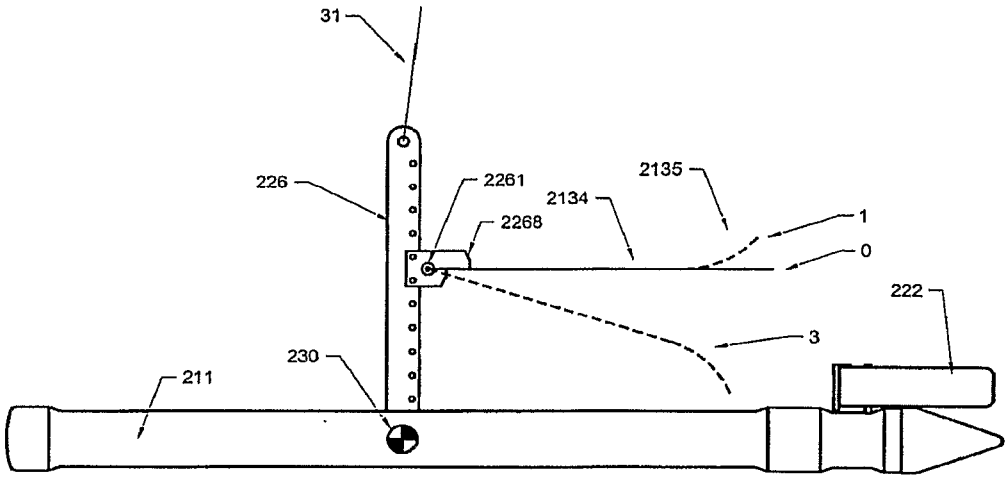

31
226
2261
2135
2134
2268
1
0
222
3
230
211

Fig 17

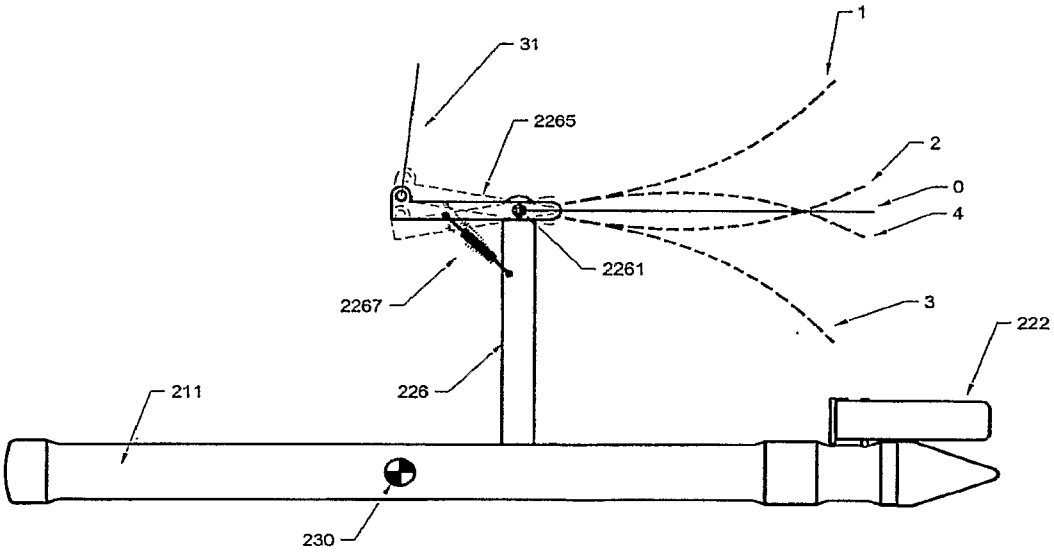

1
31
2265
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0
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2261
2267
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222
211
226
230

Fig 18

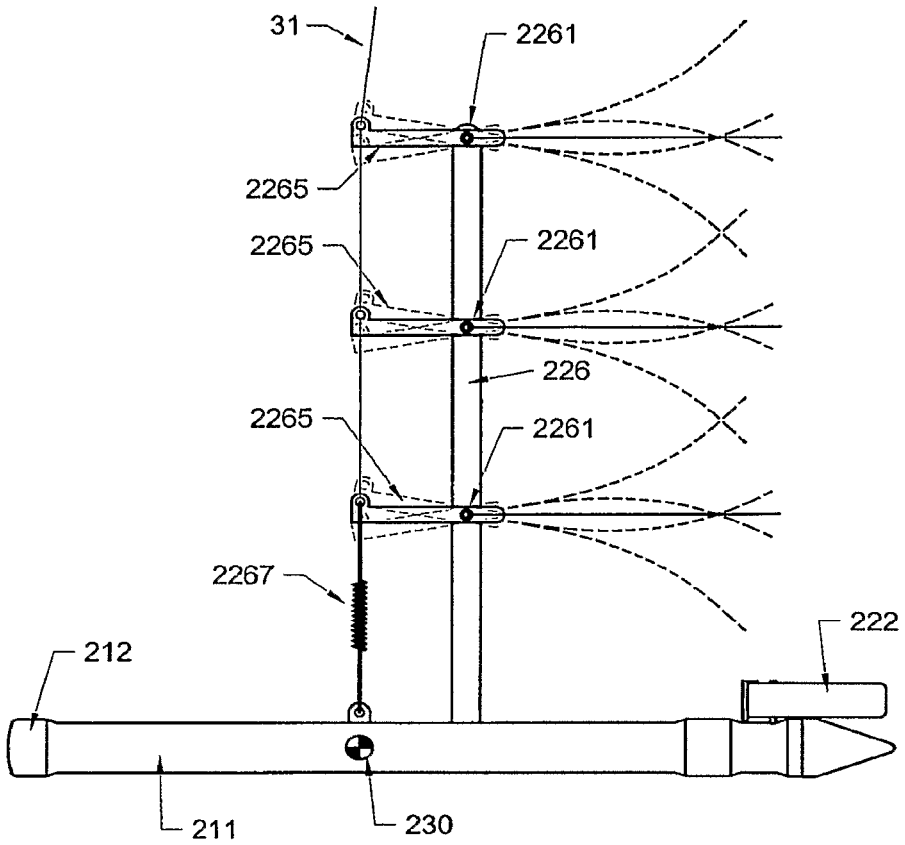

31
2261
2265
2265
2261
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2265
2261
2267
222
212
211
230

Fig 19

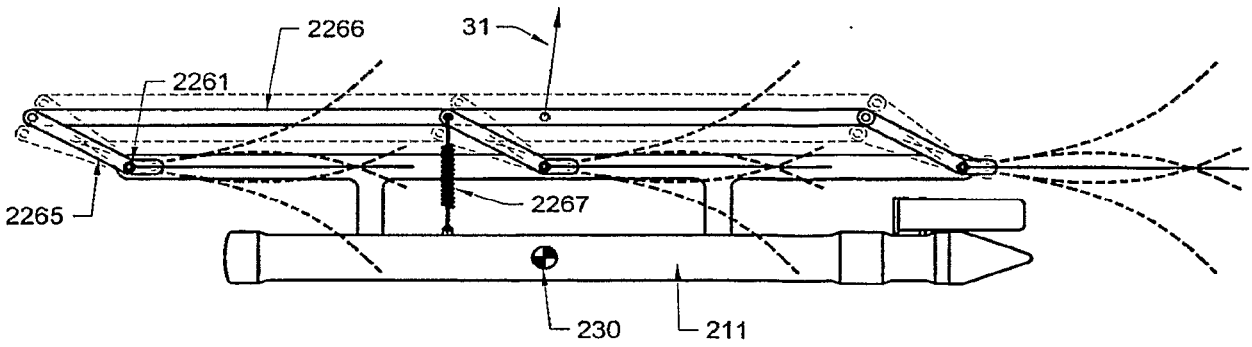

2266
31
2261
2265
2267
230
211

Fig 20

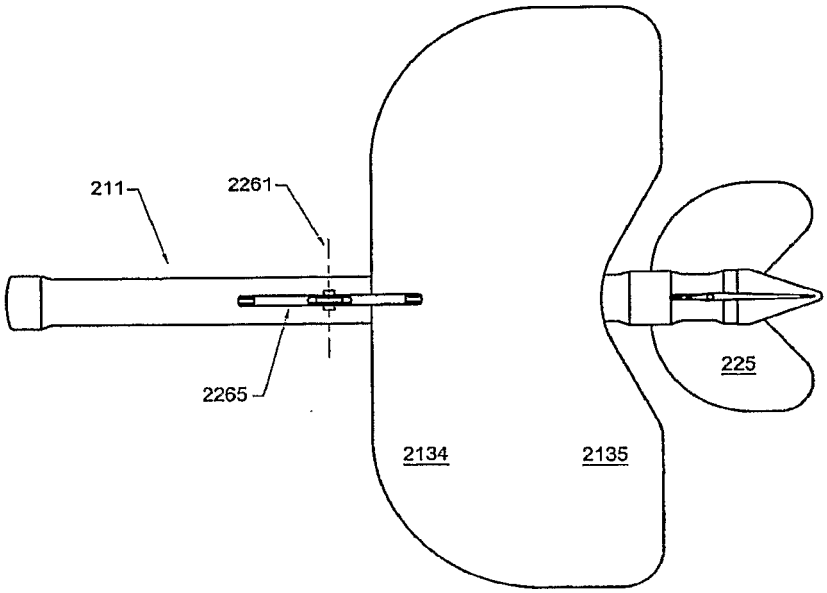

211
2261
2265
225
2134
2135

Fig 21

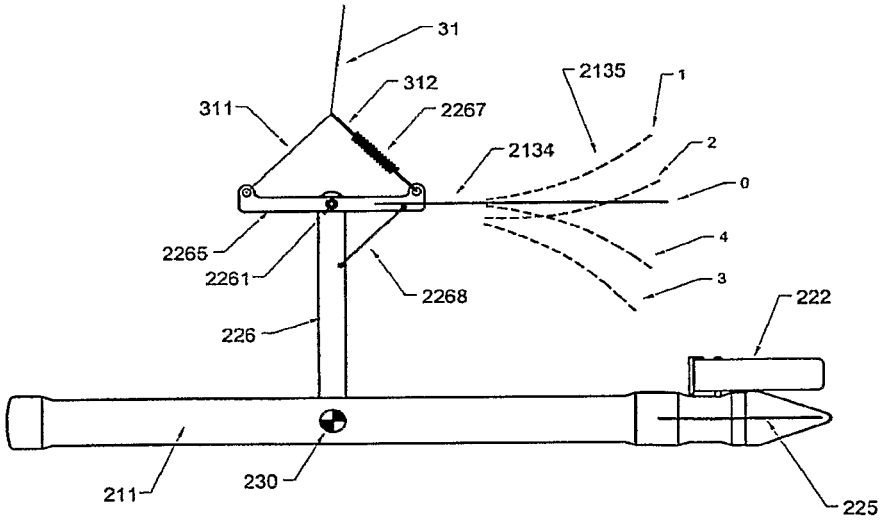

31
312
311
2267
2135
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2134
2
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2265
2261
4
3
2268
222
226
211
230
225

Fig 22a

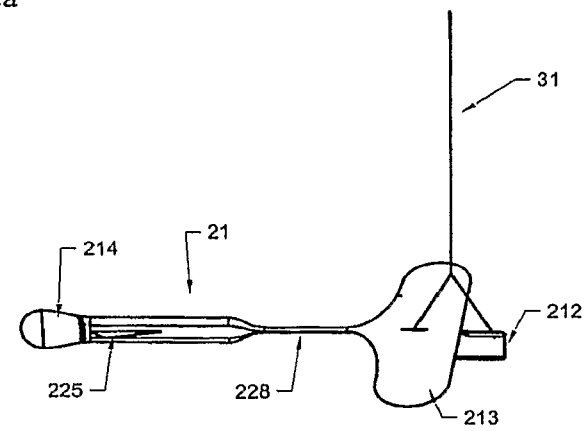


Fig 22b

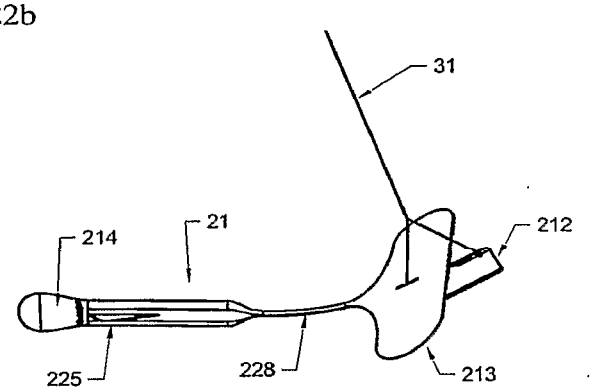


Fig 22c

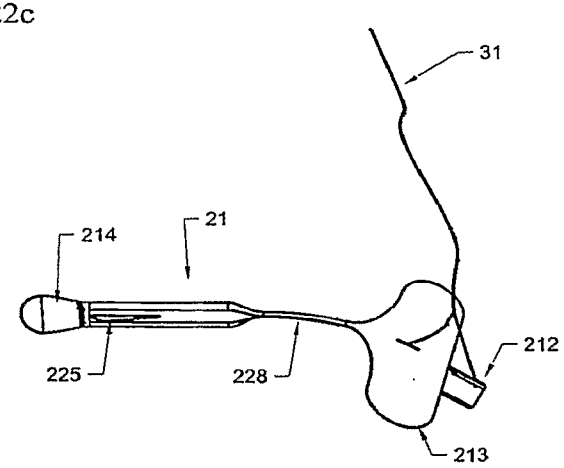


Fig 23

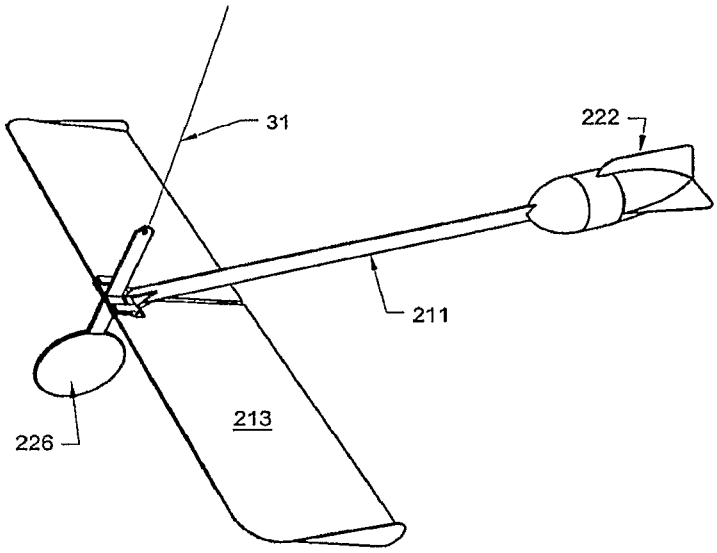


Fig 24

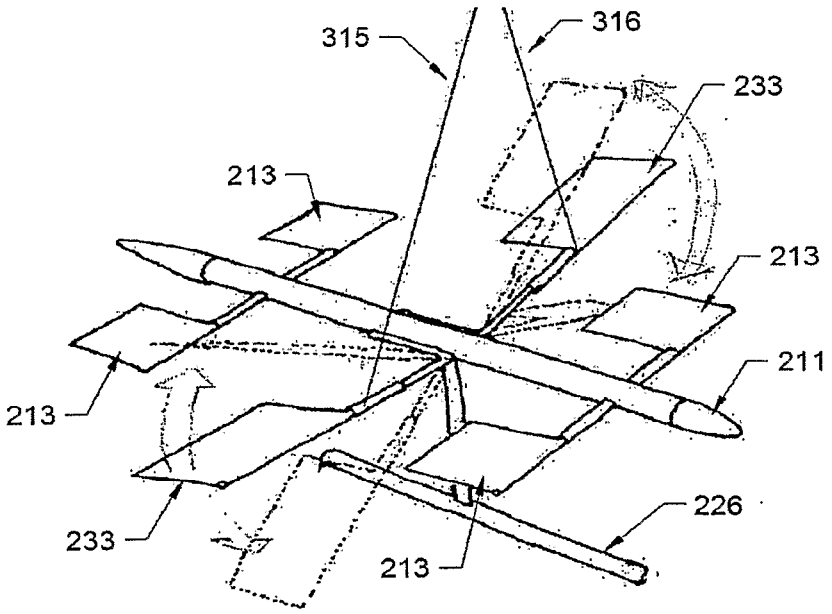


Fig 25

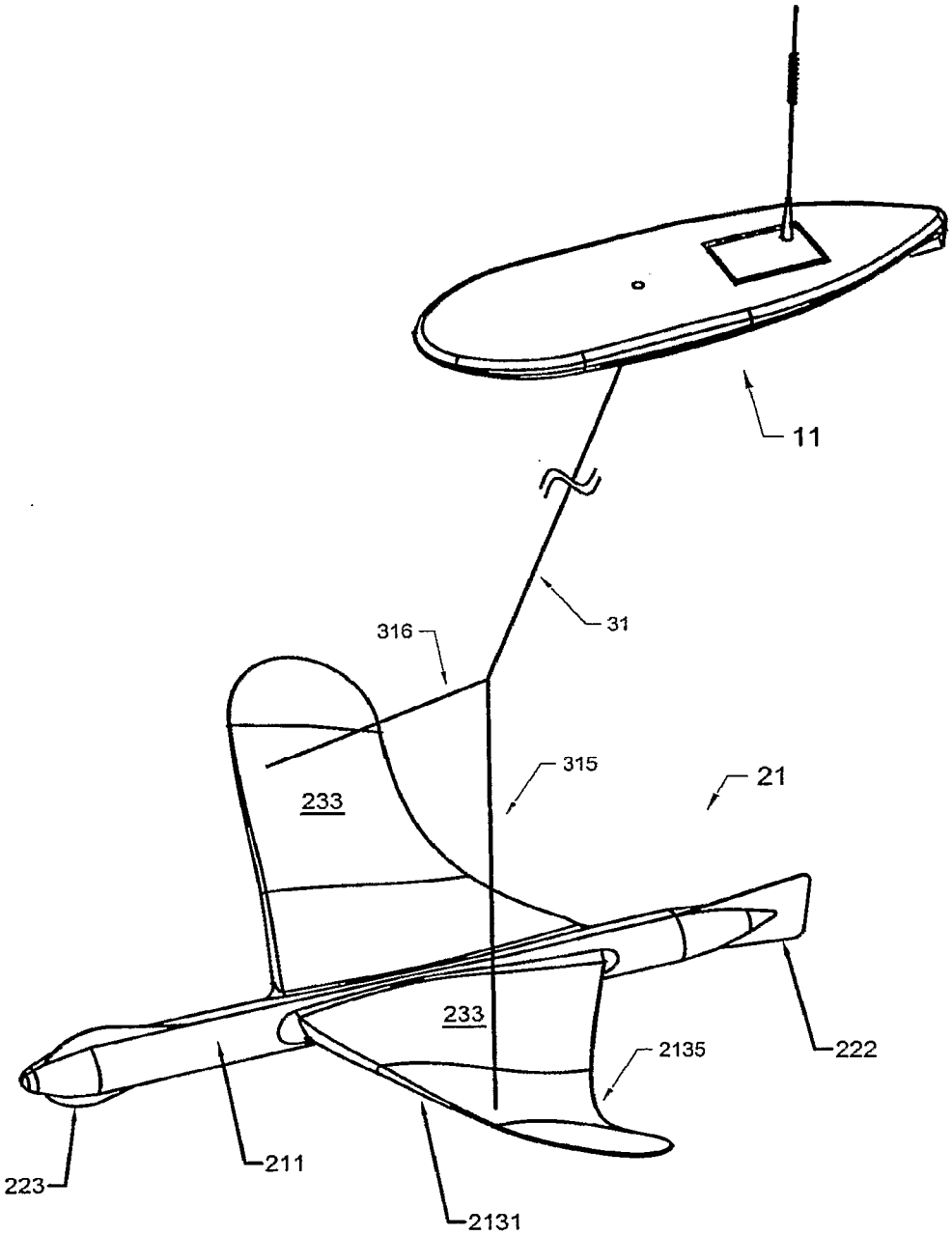

11
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315
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233
2135
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223
211
2131

Fig 26 A

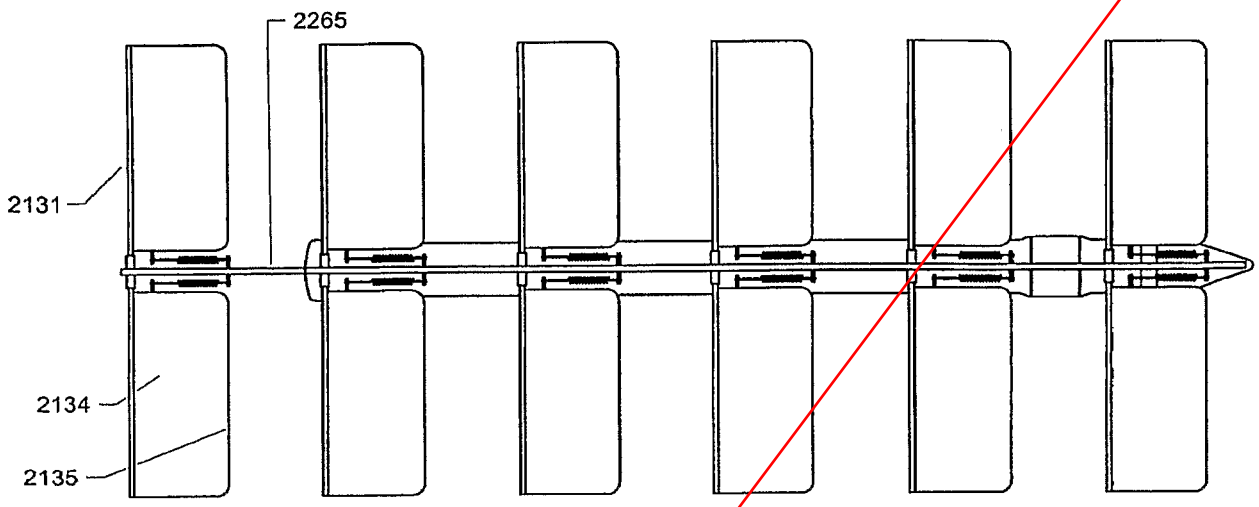


Fig 26 B

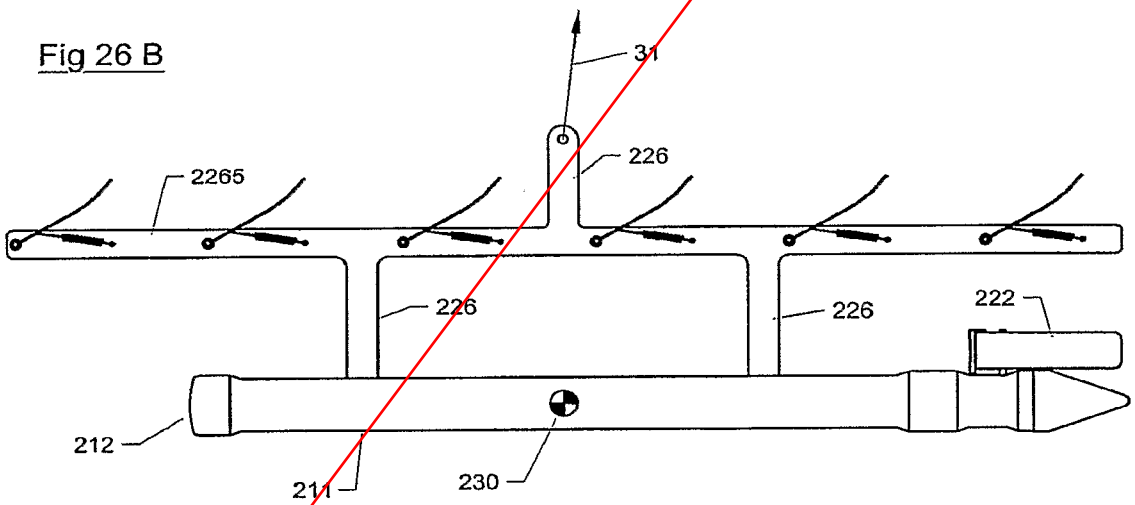


Fig 26 C

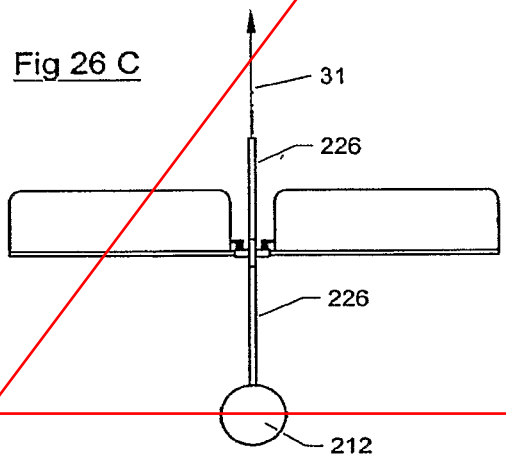


Fig 26 D

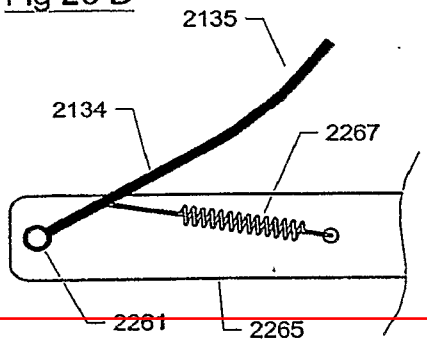


Fig 27A

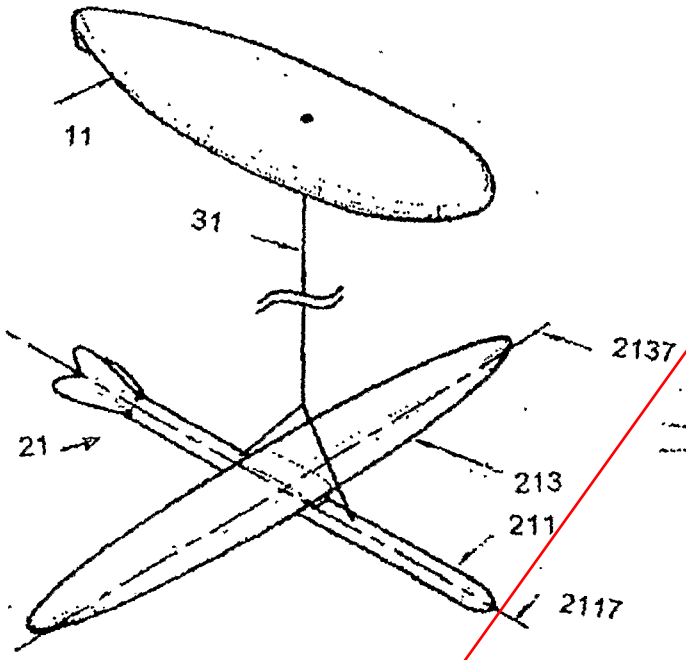


Fig 27B

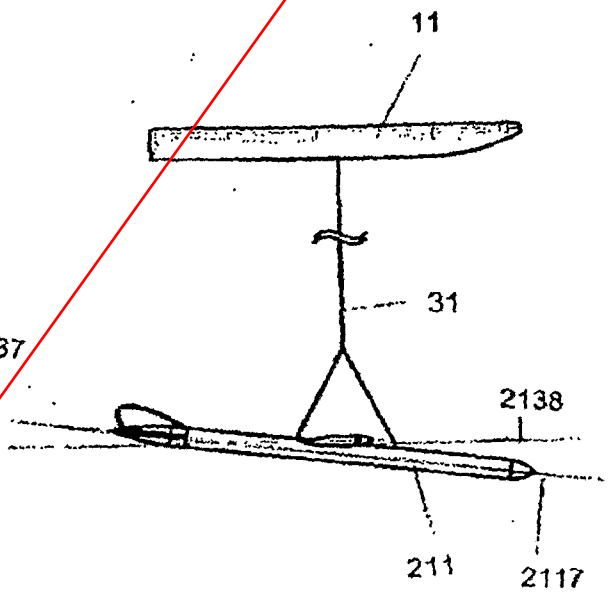


Fig 27C

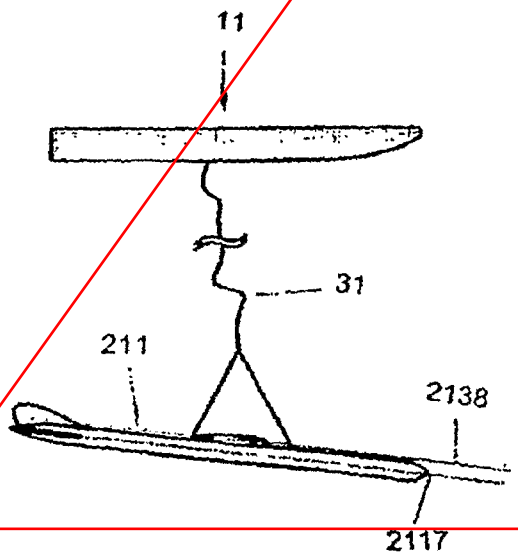


Fig 27D

